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IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS (44) 5653-5856 (2008)



Cover

See Annie K. Powell *et al.*, pp. 5698–5700.

The cover image shows the successive build-up of a Mn^{III}₁₂Mn^{II}₉ aggregate from concentric Archimedean polyhedra.

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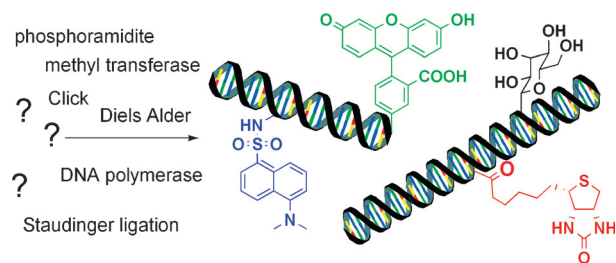
FEATURE ARTICLES

5675

Novel strategies for the site-specific covalent labelling of nucleic acids

Samuel H. Weisbrod and Andreas Marx*

This review highlights recent reports of nucleic acid functionalization.

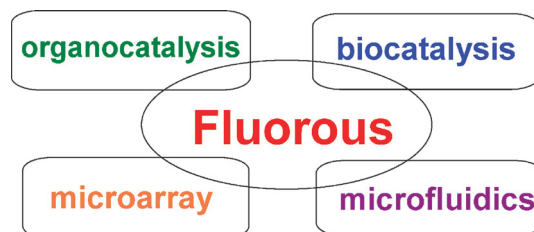


5686

New chemical and biological applications of fluororous technologies

Wei Zhang* and Chun Cai

Fluororous technology is a fast growing research area. This *feature article* highlights the new applications of fluororous technologies in organocatalysis, biocatalysis, microarray and microfluidic systems.



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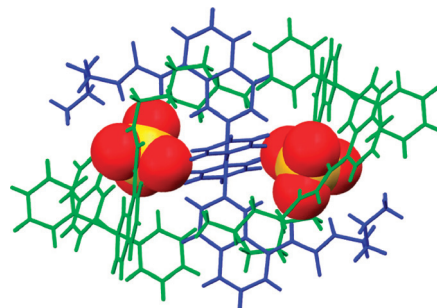
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5695

Metal–organic anion receptors: *trans*-functionalised platinum complexes

Matthew G. Fisher, Philip A. Gale,* Mark E. Light and Stephen J. Loeb*

The anion complexation properties of a *trans*-functionalised platinum(II) complex have been studied revealing a high affinity for sulfate in solution and 3 : 2 receptor : sulfate complex formation in the solid state.

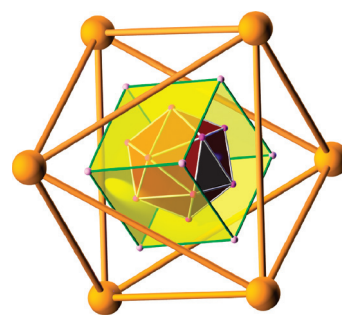


5698

Concentric Archimedean polyhedra: Mn^{III}₁₂Mn^{II}₉ aggregates linked into a cubic network

Sanjit Nayak, Yanhua Lan, Rodolphe Clérac, Christopher E. Anson and Annie K. Powell*

A Mn^{III}₁₂Mn^{II}₉ aggregate has a structure built up of concentric polyhedra with these units linked into a cubic network to give a remarkably pleasing structure isotypic with iron pyrites.

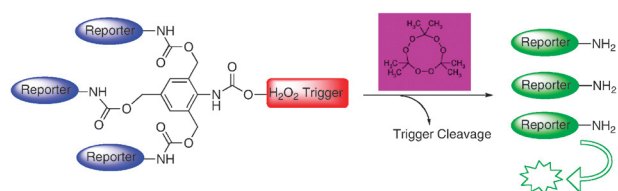


5701

Self-immolative dendritic probe for direct detection of triacetone triperoxide

Eran Sella and Doron Shabat*

A new self-immolative dendritic probe directly detects triacetone triperoxide through amplification of a single cleavage event initiated by one molecule of hydrogen peroxide into multiple-release of fluorogenic end-groups.

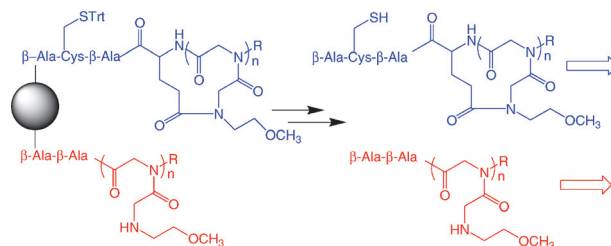


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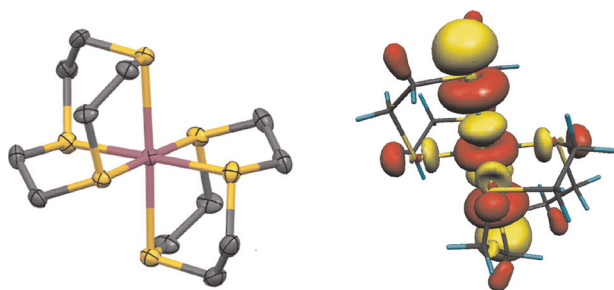
Encoded combinatorial libraries for the construction of cyclic peptoid microarrays

Yong-Uk Kwon and Thomas Kodadek*

A “one bead two compound” approach to the synthesis of encoded cyclic peptoid libraries is reported.



5707

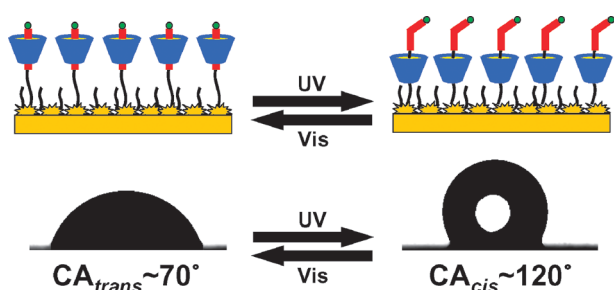


The structural characterisation and elucidation of the electronic structure of the mononuclear Pt(III) complex [Pt([9]aneS₃)₂]³⁺ ([9]aneS₃ = 1,4,7-trithiacyclononane)

Emma Stephen, Alexander J. Blake, E. Stephen Davies, Jonathan McMaster* and Martin Schröder*

The structure of the six co-ordinate Pt(III) complex, [Pt([9]aneS₃)₂](PF₆)₃, possesses a distorted octahedral S₆ co-ordination sphere; EPR and DFT studies reveal a Pt 5d₂ ground state with significant axial S-character in the SOMO.

5710

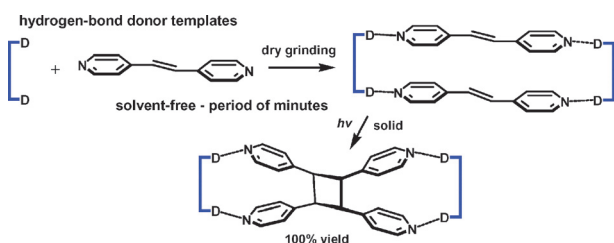


Tuning surface wettability through photocontrolled reversible molecular shuttle

Pengbo Wan, Yugui Jiang, Yapei Wang, Zhiqiang Wang and Xi Zhang*

A photocontrolled molecular shuttle SAM based on an α -cyclodextrin (α -CD)/azobenzene inclusion complex on rough gold surfaces is fabricated, which can reversibly switch the surface wettability by transferring external energy (light) to molecular mechanical motion.

5713

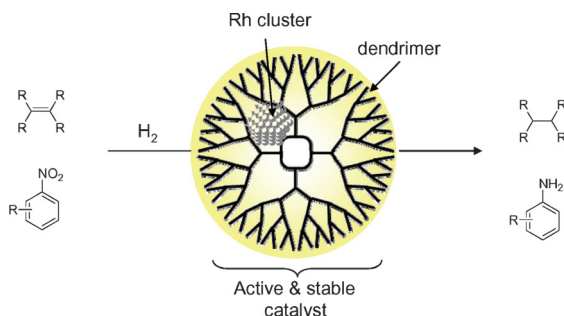


General application of mechanochemistry to templated solid-state reactivity: rapid and solvent-free access to crystalline supermolecules

M. B. J. Atkinson, D.-K. Bučar, A. N. Sokolov, T. Friščić, C. N. Robinson, M. Y. Bilal, N. G. Sinada, A. Chevannes and L. R. MacGillivray*

Mechanochemistry is successfully applied to template-controlled solid-state reactivity so as to afford reactive supramolecular assemblies under solvent-free conditions and in periods of minutes.

5716



Nanocage catalysts—rhodium nanoclusters encapsulated with dendrimers as accessible and stable catalysts for olefin and nitroarene hydrogenations

Ikuse Nakamura, Yoshinori Yamanoi, Tetsu Yonezawa, Takane Imaoka, Kimihisa Yamamoto* and Hiroshi Nishihara*

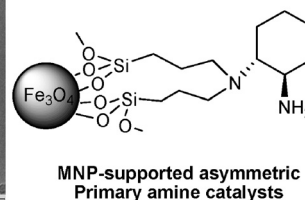
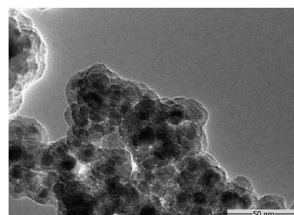
The feature of rhodium nanocage catalysts encapsulated with dendrimers is that substrates can pass through the branches of the protecting groups without releasing nanoclusters.

5719

Asymmetric bifunctional primary aminocatalysis on magnetic nanoparticles

Sanzhong Luo,* Xiaoxi Zheng and Jin-Pei Cheng*

MNP-supported chiral primary amine catalysts were developed and evaluated as asymmetric bifunctional enamine catalysts in direct aldol reaction, showing essentially unchanged activity and stereoselectivity after 11 recycles.

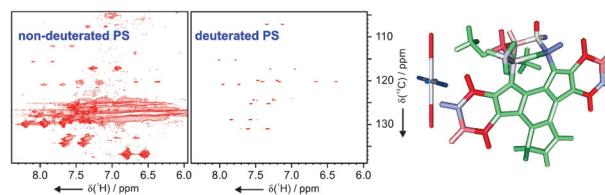


5722

Deuterated polymer gels for measuring anisotropic NMR parameters with strongly reduced artefacts

Grit Kummerlöwe, Sebastian Knör, Andreas O. Frank, Thomas Paululat, Horst Kessler and Burkhard Luy*

Residual dipolar couplings as anisotropic NMR parameters are a powerful tool for structure determination, but they can only be measured inside a suitable anisotropic matrix. The deuterated, stretched polystyrene (PS) introduced here represents such a matrix with which spectra of unprecedented quality are obtained.

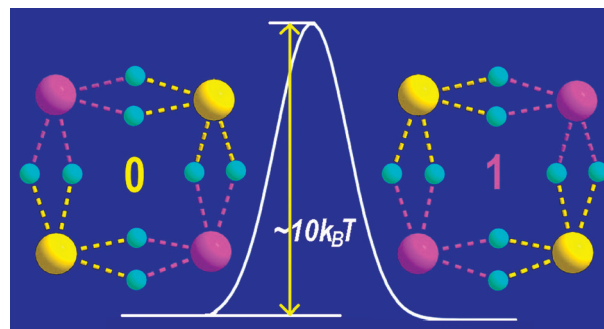


5725

A mixed-valence (Fe^{II})₂(Fe^{III})₂ square for molecular expression of quantum cellular automata

Yonggang Zhao, Dong Guo, Yang Liu, Cheng He and Chunying Duan*

A di-mixed-valence molecular square (Fe^{II})₂(Fe^{III})₂ with two extra mobile electrons (or holes) occupying the opposite corners is achieved *via* self-assembly as a pure phase with remarkable stability for molecular expression of quantum cellular automata (QCA).

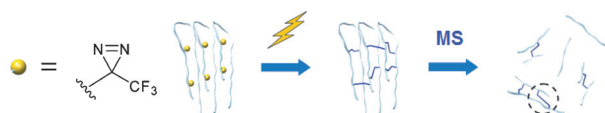


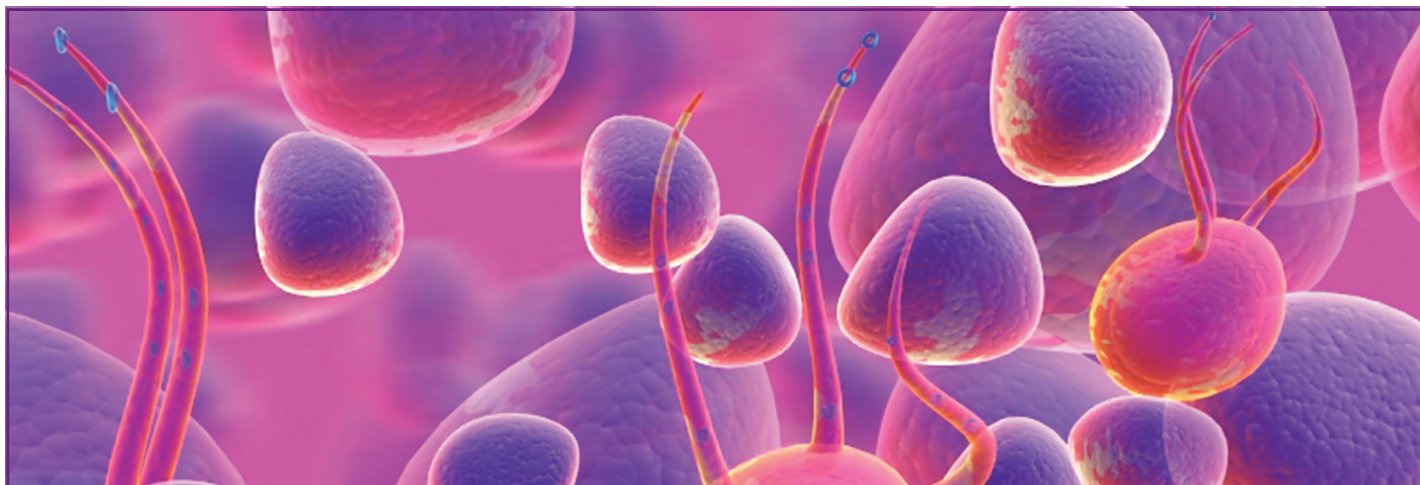
5728

Trifluoromethyldiazirine: an effective photo-induced cross-linking probe for exploring amyloid formation

David P. Smith, Jon Anderson, Jeffrey Plante, Alison E. Ashcroft, Sheena E. Radford, Andrew J. Wilson* and Martin J. Parker*

Ion mobility spectrometry–mass spectrometry combined with photo-induced cross-linking of site-specifically incorporated trifluoromethyldiazirine facilitates structural characterisation of amyloid fibrils.





Integrative Biology would like to congratulate the 2008 recipients of the

Nobel Prize in Chemistry

The prize was awarded to Roger Y. Tsien, Osamu Shimomura and Martin Chalfie for outstanding contributions in chemistry for their work in the development of the gene marker green fluorescent protein (GFP).

"We are all immensely pleased that 2008 Nobel Prize winner Roger Tsien is an Editorial Board member for *Integrative Biology*; his work typifies the quality of material we are seeking in the development of biology through new tools and technologies."

Harp Minhas, managing editor of *Integrative Biology*

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Professor Roger Y. Tsien, Editorial Board, *Integrative Biology*

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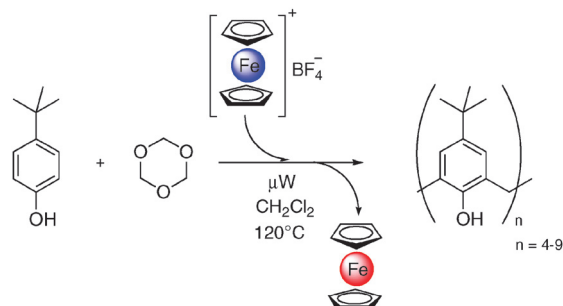
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5731

Ferrocenium salts mediate *para-tert*-butylcalixarene synthesis

Sean P. Bew,* Myles R. Cheesman and Sunil V. Sharma

An innovative synthesis of calixarenes is mediated *via* a 17-electron metallocene salt in an efficient, high yielding one-pot or convergent protocol.

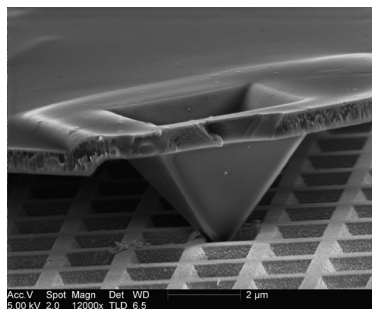


5734

Dip-pen nanolithography and SERRS as synergic techniques

Robert J. Stokes, Jennifer A. Dougan and Duncan Graham*

The powerful combination of dip-pen nanolithography (DPN) performed on non-flat plasmonic gold surfaces and subsequent detection by surface enhanced resonance Raman scattering (SERRS) is demonstrated. The inherent sensitivity of this true nano-spectroscopy means it is an ideal readout tool for high density DPN generated biosensor arrays.

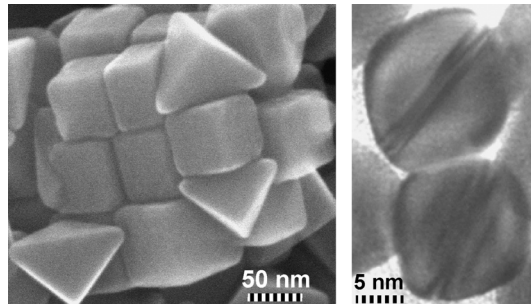


5737

Direct structural transformation of silver platelets into right bipyramids and twinned cube nanoparticles: morphology governed by defects

Matthew McEachran and Vladimir Kitaev*

Transformation pathways of silver platelets to right bipyramids and twinned cubes in conditions that preserve original 2-D structural defects in resulting 3-D morphologies are elucidated based on optical spectroscopy and electron microscopy evidence.

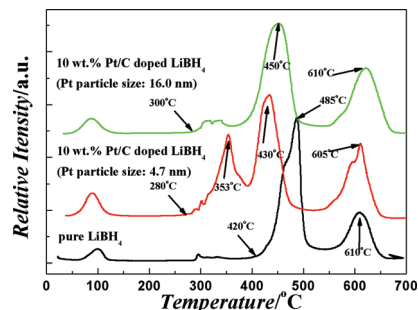


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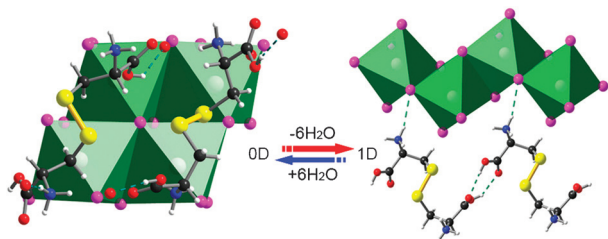
Enhanced dehydrogenation of LiBH₄ catalyzed by carbon-supported Pt nanoparticles

Juan Xu, Xuebin Yu, Zhiqing Zou, Zhilin Li, Zhu Wu, Daniel L. Akins and Hui Yang*

The catalytic dehydrogenation of LiBH₄ doped with carbon-supported Pt nanoparticles shows that smaller Pt nanoparticles result in greater enhanced catalytic dehydrogenation of LiBH₄ than do larger Pt nanoparticles.



5743

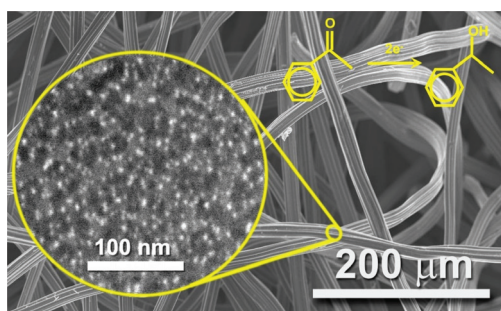


Reversible dynamic isomerism change in the solid state, from Bi_4I_{16} clusters to BiI_4 1D chains in L-cystine based hybrids: templating effect of cations in iodobismuthate network formation

Wenhua Bi and Nicolas Mercier*

The templating effect of cations in iodobismuthate hybrids is highlighted by a unique reversible dynamic isomerism change from Bi_4I_{16} clusters to Bi_4 chains in the solid state.

5746

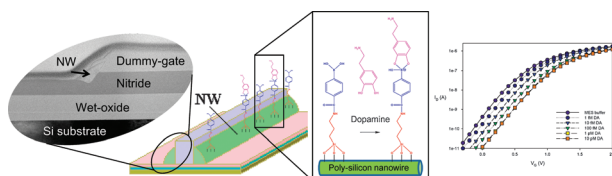


Electrodeposition of a palladium nanocatalyst by ion confinement in polyelectrolyte multilayers

Miguel Vago, Mario Tagliazucchi, Federico J. Williams and Ernesto J. Calvo*

A highly efficient and selective material for electrocatalytic hydrogenation has been prepared by depositing monodisperse palladium nanoparticles of size (6 ± 1) nm by electrochemical reduction of PdCl_4^{2-} confined in a polyelectrolyte multilayer film.

5749

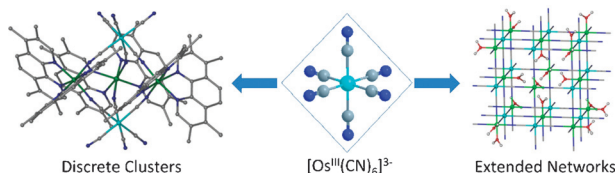


Ultrasensitive detection of dopamine using a polysilicon nanowire field-effect transistor

Chih-Heng Lin, Cheng-Yun Hsiao, Cheng-Hsiung Hung, Yen-Ren Lo, Cheng-Che Lee, Chun-Jung Su, Horng-Chin Lin, Fu-Hsiang Ko, Tiao-Yuan Huang and Yuh-Shyong Yang*

An unprecedented high sensitive sensing of neurotransmitter dopamine at fM level was demonstrated using a phenylboronate-functionalized polycrystalline silicon nanowire field-effect transistor housed in a microfluidic channel.

5752



Hexacyanoosmate(III) chemistry: preparation and magnetic properties of a pentanuclear cluster and a Prussian blue analogue with Ni(II)

Matthew G. Hilfiger, Michael Shatruk, Andrey Prosvirin and Kim R. Dunbar*

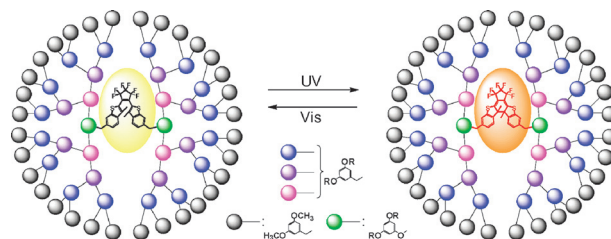
The hexacyanoosmate(III) anion was used to prepare a pentanuclear cyanide bridged molecular cluster with ligand-protected Ni(II) ions as well as the corresponding Prussian blue phase from a reaction with aqueous Ni(II) ions.

5755

Dendrimer diarylethenes: the memory effect of conformation in polymer matrices

Yuhei Fujimoto, Takashi Ubukata and Yasushi Yokoyama*

Photochromic dendrimer diarylethenes were synthesized: the strong memory effect of cyclizable conformation of the open form generated from the closed form by visible light irradiation in polycarbonate films was observed.

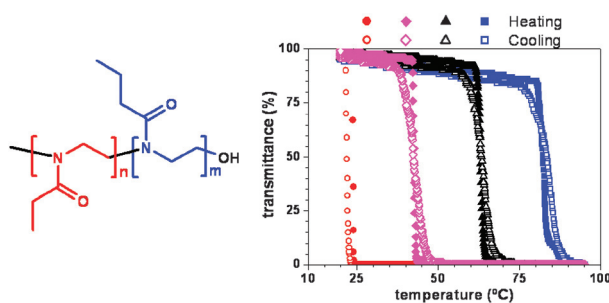


5758

Tuning the LCST of poly(2-oxazoline)s by varying composition and molecular weight: alternatives to poly(*N*-isopropylacrylamide)?

Richard Hoogenboom,* Hanneke M. L. Thijs, Mark J. H. C. Jochems, Bart M. van Lankvelt, Martin W. M. Fijten and Ulrich S. Schubert*

The tunable LCST of random poly(2-oxazoline)s based on 2-ethyl-2-oxazoline and 2-*n*-propyl-2-oxazoline shows no hysteresis nor concentration dependence making them suitable alternatives to PNIPAM.

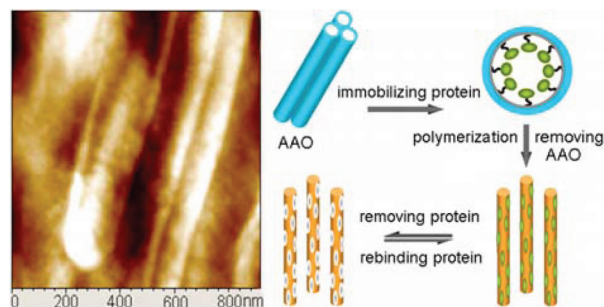


5761

Surface molecularly imprinted nanowire for protein specific recognition

Ruizhuo Ouyang, Jianping Lei and Huangxian Ju*

A surface molecularly imprinted nanowire is designed by chemical polymerization of dopamine in neutral aqueous solution, which shows high binding capacity and acceptable specific recognition behavior towards template proteins.

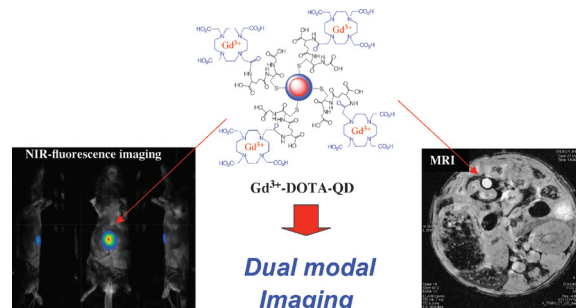


5764

Gd³⁺-functionalized near-infrared quantum dots for *in vivo* dual modal (fluorescence/magnetic resonance) imaging

Takashi Jin,* Yoshichika Yoshioka, Fumihiko Fujii, Yutaka Komai, Junji Seki and Akitoshi Seiyama

Gd³⁺-functionalized near-infrared emitting quantum dots were synthesized as a dual modal contrast agent for *in vivo* fluorescence imaging and magnetic resonance imaging.

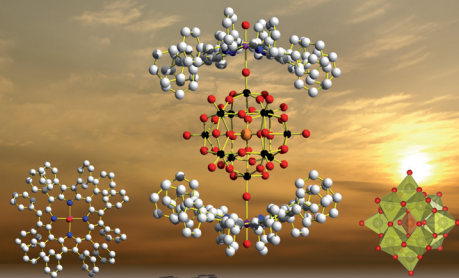


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A discrete conglomerate of a
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1359-7445(2007)39:1-7

Make an impact

Introducing Professor Mike Doyle

Associate Editor for Organic Chemistry

Michael P. (Mike) Doyle is Professor and Chair of the Department of Chemistry and Biochemistry at the University of Maryland, College Park. He has been the recipient of numerous awards, including the George C. Pimentel Award for Chemical Education in 2002 and the Arthur C. Cope Scholar Award in 2006. He has written or coauthored ten books, including *Basic Organic Stereochemistry*, 20 book chapters, and he is the co-author of more than 270 journal publications. The inventor of chiral dirhodium carboxamidate catalysts known as "Doyle catalysts," his research is focused on applications with metal carbene transformations, Lewis acid catalyzed reactions, and selective catalytic oxidations.

Submit your work to *ChemComm*

Professor Doyle will be delighted to receive submissions from North America in the field of organic chemistry. Submissions to *ChemComm* are welcomed via ReSource, our homepage for authors and referees.



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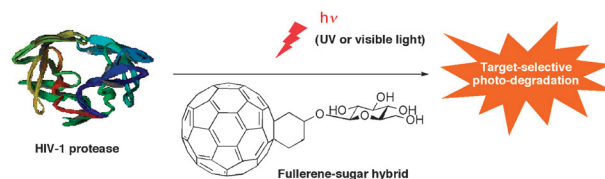
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5767

Target-selective photo-degradation of HIV-1 protease by a fullerene-sugar hybrid

Shuho Tanimoto, Satoshi Sakai, Shuichi Matsumura, Daisuke Takahashi and Kazunobu Toshima*

A designed fullerene-sugar hybrid effectively and selectively degraded the target protein, HIV-1 protease, which has high affinity for the fullerene moiety. Degradation was achieved using long-wavelength UV or visible photo-irradiation, in the absence of any additives and under neutral conditions.

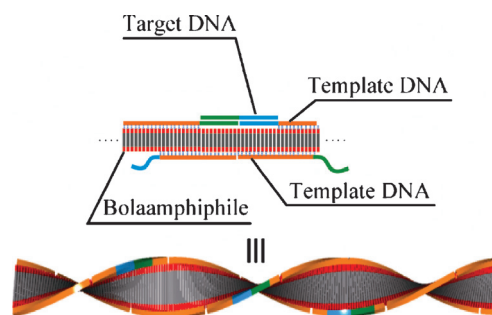


5770

Nanofiber formation from sequence-selective DNA-templated self-assembly of a thymidylic acid-appended bolaamphiphile

Rika Iwaura,* Mayumi Ohnishi-Kameyama and Toshimi Shimizu*

Here we describe the formation of DNA sequence-selective supramolecular nanofibers which were obtained only in the presence of the target oligonucleotide by the quaternary self-assembly of thymidylic acid-appended bolaamphiphile **1**, with heteropolymeric oligonucleotides as templates.

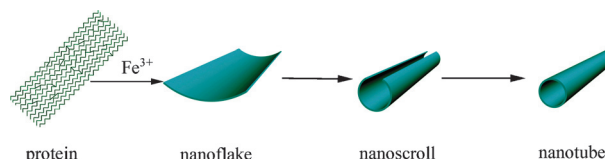


5773

Egg albumin as a nanoreactor for growing single-crystalline Fe₃O₄ nanotubes with high yields

Baoyou Geng,* Fangming Zhan, Han Jiang, Yijun Guo and Zhoujing Xing

Single-crystalline Fe₃O₄ nanotubes have been synthesized successfully by using egg albumin as a nanoreactor. These three-dimensional material nanotubes are formed through a rolling mechanism under mild biological conditions.

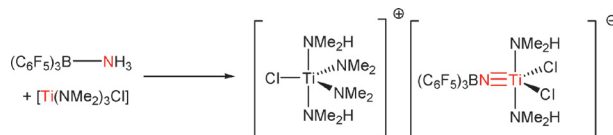


5776

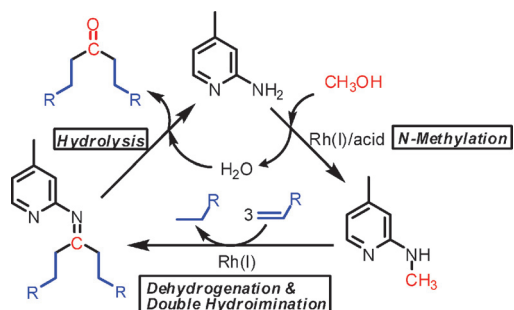
Mononuclear Ti≡N complexes formed by the facile multiple deprotonation of H₃N·B(C₆F₅)₃: the importance of chloride ligands

Anna-Marie Fuller, William Clegg, Ross W. Harrington, David L. Hughes and Simon J. Lancaster*

The crystalline ion-pair [TiCl(NMe₂)₂(NMe₂H)₂]⁺[TiCl₂{NB(C₆F₅)₃}(NMe₂H)₂]⁻, in which the anion has a triply bonded nitridoborate ligand, is formed through the multiple activation of H₃N·B(C₆F₅)₃ when treated with [Ti(NMe₂)₃Cl].



5779

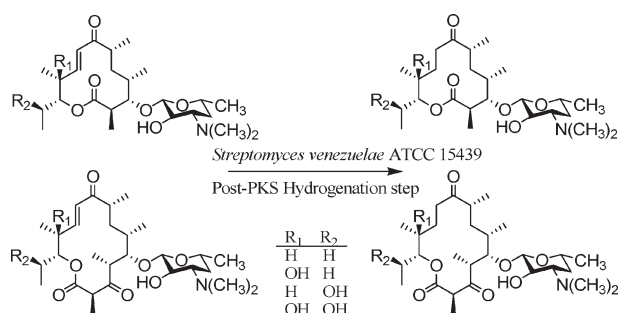


Rhodium(I)-catalyzed one-pot synthesis of dialkyl ketones from methanol and alkenes through directed sp^3 C–H bond activation of *N*-methylamine

Eun-Ae Jo, Ji-Hyun Lee and Chul-Ho Jun*

Chelation-assisted double hydroacylation of methanol with alkenes through *N*-methylation was developed using a catalytic system consisting of Rh(I), 2-amino-4-picoline and benzoic acid to afford symmetric dialkyl ketones.

5782

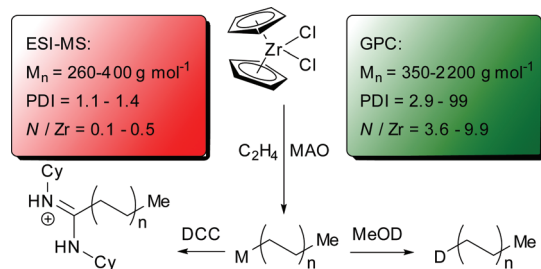


Exploiting the natural metabolic diversity of *Streptomyces venezuelae* to generate unusual reduced macrolides

Je Won Park, Hong-Se Oh, Won Seok Jung, Sung Ryeol Park, Ah Reum Han, Yeon-Hee Ban, Eun Ji Kim, Han-Young Kang and Yeo Joon Yoon*

The discovery of an unusual set of reduced macrolide antibiotics by combination of organic synthesis and a biosynthetic approach using the unique metabolic diversity of *Streptomyces venezuelae* is described.

5785

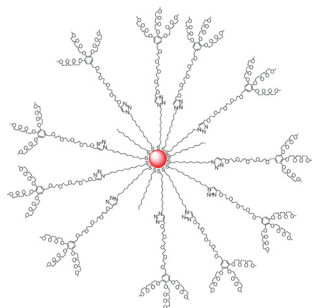


Are carbodiimide-quenched polyethylene distributions representative of bulk polymer samples? Analysis of metallocene-catalyzed ethylene polymerization by ESI-MS, MALDI, GPC and NMR

Beth Moscato and Clark Landis

Polyethylene distributions observed by ESI-MS following the quench of ethylene polymerizations with *N,N'*-dicyclohexylcarbodiimide disagree with results from conventional analytical techniques. Systematic biases signify that ESI-MS analysis alone cannot yield meaningful reaction kinetics.

5788



How to very efficiently functionalize gold nanoparticles by “click” chemistry

Elodie Boisselier, Lionel Salmon, Jaime Ruiz and Didier Astruc*

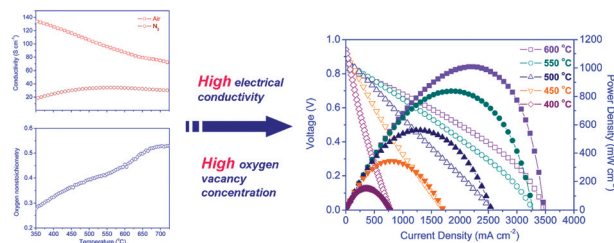
Difficulties previously encountered in the very useful “click” functionalization of gold nanoparticles (AuNPs) resulting in low yields are now overcome by using specific conditions that provide quantitative “click” reactions between azidoalkylthiolate-AuNPs with various hydrophilic and hydrophobic alkynes.

5791

A novel efficient oxide electrode for electrocatalytic oxygen reduction at 400–600 °C

Wei Zhou, Zongping Shao,* Ran Ran, Wanqin Jin and Nanping Xu

A novel $\text{SrNb}_{0.1}\text{Co}_{0.9}\text{O}_{3-\delta}$ electrode material, which possesses not only high electrical conductivity but also large oxygen vacancy concentration at 400–600 °C, shows an excellent performance in the application of reduced temperature solid-oxide fuel cells.

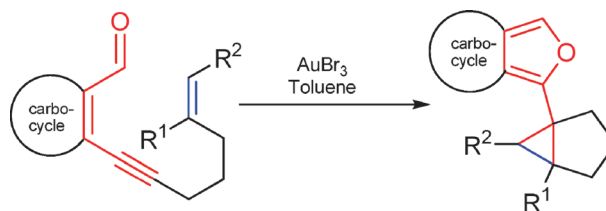


5794

Regioselectivities in alkyne activation: synthesis of 2-(bicyclo[3.1.0]hexan-1-yl)furan derivatives by Au-catalyzed cyclization and cyclopropanation

Chang Ho Oh,* Su Jin Lee, Ji Ho Lee and Yoon Jung Na

2-Alkynyl-1-cycloalkenecarbaldehydes, in the presence of gold catalysts, undergo aurative cyclization *via* the 5-*exo-dig* mode to form Au-carbene intermediates which react with a double bond to form the corresponding cyclopropanes.

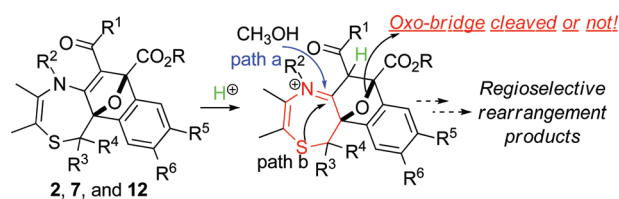


5797

Thiazepine moiety-controlled regioselective rearrangements of 7-oxanorbornadiene derivatives

Hanfeng Ding, Yiping Zhang, Weijun Yao, Duanjun Xu and Cheng Ma*

We have discovered thiazepine moiety-controlled regioselective skeletal rearrangements of 7-oxanorbornadiene derivatives (**2**, **7** and **12**) with high regioselectivity and/or diastereoselectivity in the presence of Brønsted acid.

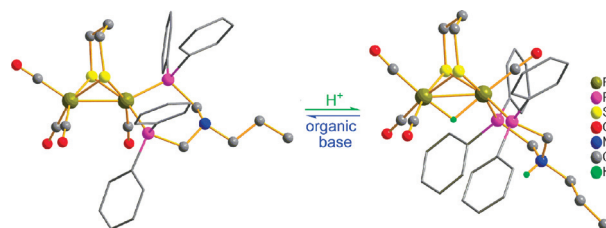


5800

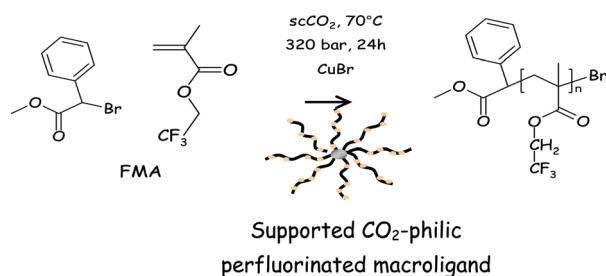
A proton-hydride diiron complex with a base-containing diphosphine ligand relevant to the [FeFe]-hydrogenase active site

Ning Wang, Mei Wang,* Tingting Zhang, Ping Li, Jihong Liu and Licheng Sun*

A diiron complex holding a μ -hydride on the iron atoms and a proton on the basic site of a chelating ligand was prepared and crystallographically characterized as a structural model of the [FeFe]-hydrogenase active site.



5803

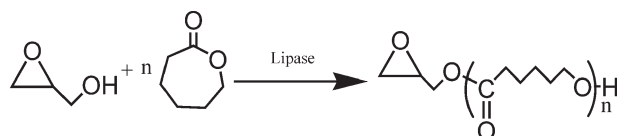


Supported ATRP of fluorinated methacrylates in supercritical carbon dioxide: preparation of scCO₂ soluble polymers with low catalytic residues

Bruno Grignard,* Cédric Calberg, Christine Jérôme, Wenxin Wang, Steven Howdle and Christophe Detrembleur*

Fluorinated polymers with well defined molecular weight and low polydispersity were prepared in supercritical carbon dioxide by supported ATRP using a copper salt ligated to a polymeric fluorinated ligand immobilised onto silica.

5806

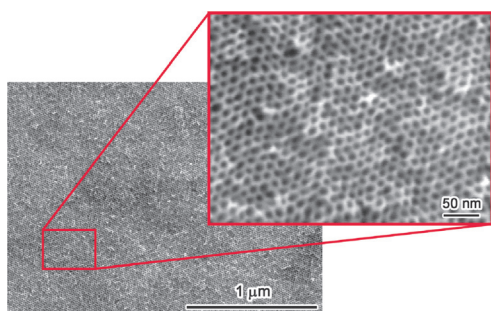


Epoxy functionalised poly(ε-caprolactone): synthesis and application

Jiaxiang Zhou, Wenxin Wang, Silvia Villarroya, Kristofer J. Thurecht and Steven M. Howdle*

Glycidol is used as an initiator for ring-opening polymerisation of ε-caprolactone to synthesise epoxy-functionalised poly(ε-caprolactone) in a reaction catalysed by lipase, and the epoxy-functionalised PCL was further copolymerised with carbon dioxide or anhydride to produce novel graft or hyperbranched copolymers.

5809

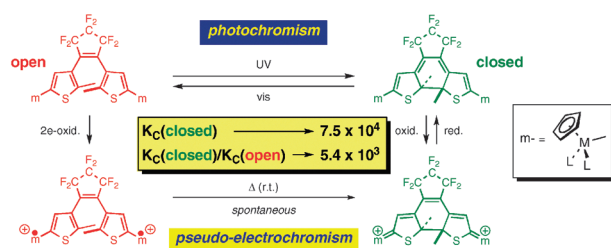


Preparation of a self-standing mesoporous carbon membrane with perpendicularly-ordered pore structures

Ken'ichi Kimijima, Akari Hayashi and Ichizo Yagi*

A self-standing mesoporous carbon membrane with perpendicularly-ordered pore structures was prepared through a simple synthetic method, including a process of drying and use of a porous alumina support.

5812



Remarkable switching behavior of bimodally stimuli-responsive photochromic dithienylethenes with redox-active organometallic attachments

Keiko Motoyama, Takashi Koike and Munetaka Akita*

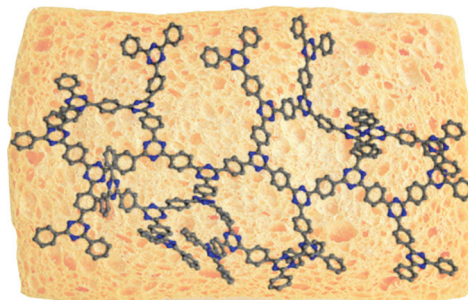
Organometallic dithienylethenes with the redox-active M(η^5 -C₅H₅)L₂-type attachments (M = Fe, Ru; L = CO, PR₃) exhibit bimodally stimuli-responsive, photo- and pseudo-electrochromic behavior with a remarkable switching performance.

5815

“Everything is surface”: tunable polymer organic frameworks with ultrahigh dye sorption capacity

Pierre Kuhn,* Kathleen Krüger, Arne Thomas and Markus Antonietti

Carbonaceous polymer networks with tunable porosity were found to behave as exceptional adsorbents toward large organic molecules such as organic dyes.

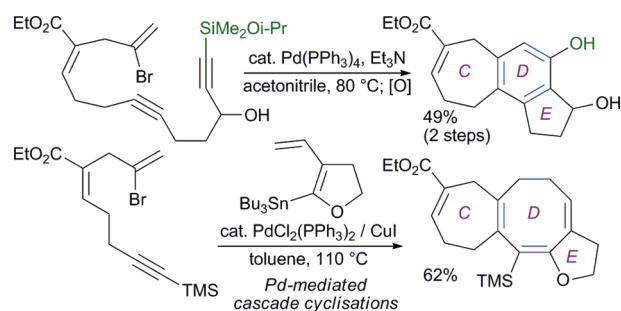


5818

A palladium-mediated cascade cyclisation approach to the CDE cores of rubriflorldilactone A and lancifodilactone G

Marie-Caroline A. Cordonnier, S. B. Jennifer Kan and Edward A. Anderson*

Palladium-mediated cascade cyclisation reactions have been applied to the synthesis of the CDE-ring cores of two anti-HIV natural products, rubriflorldilactone A and lancifodilactone G. In addition, several unusual pericyclic cascade processes are reported.

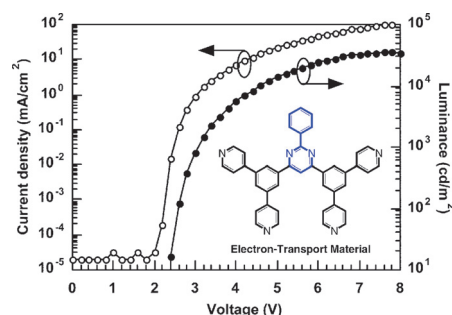


5821

2-Phenylpyrimidine skeleton-based electron-transport materials for extremely efficient green organic light-emitting devices

Hisahiro Sasabe, Takayuki Chiba, Shi-Jian Su, Yong-Jin Pu, Ken-ichi Nakayama and Junji Kido*

2-Phenylpyrimidine skeleton-based electron-transport materials are designed and synthesized and extremely efficient green PHOLEDs are developed. The devices show efficiencies of 128 lm W^{-1} at 100 cd m^{-2} .

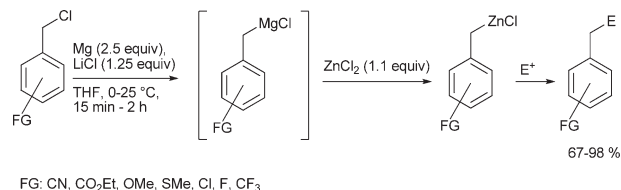


5824

Polyfunctional benzylic zinc chlorides by the direct insertion of magnesium into benzylic chlorides in the presence of LiCl and ZnCl₂

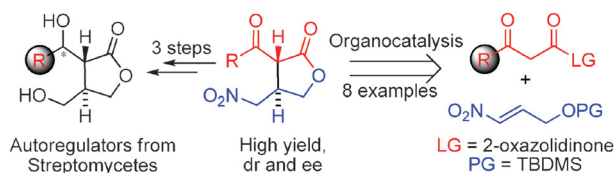
Albrecht Metzger, Fabian M. Piller and Paul Knochel*

Benzylic zinc chlorides bearing various functional groups are smoothly prepared by the direct insertion of magnesium into benzylic chlorides in the presence of LiCl and ZnCl₂.



FG: CN, CO₂Et, OMe, SMe, Cl, F, CF₃

5827

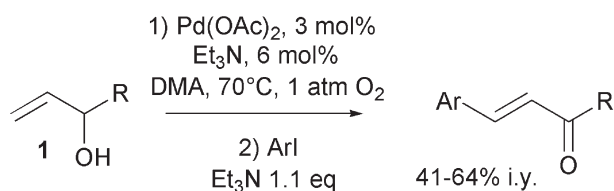


A modular and organocatalytic approach to γ -butyrolactone autoregulators from Streptomycetes

Petteri Elsner, Hao Jiang, Johanne B. Nielsen, Filippo Pasi and Karl Anker Jørgensen*

A general and efficient synthesis of optically active γ -butyrolactone autoregulators has been developed.

5830



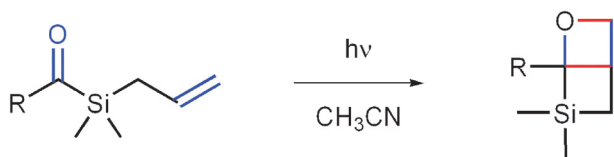
One single catalyst, Pd(OAc)₂, for two sequential very different steps: allylic alcohol oxidation–Heck reaction. Access to functionalised α,β -unsaturated ketones

Frédéric Batt, Christel Gozzi* and Fabienne Fache*

Two very different reactions, allylic alcohol oxidation and Heck reaction, were performed in a one-pot sequential procedure with only one single addition of Pd(OAc)₂.

5833

1-alkyl-6-oxa-2-silabicyclo[2.2.0] hexanes.

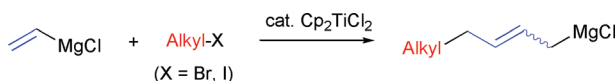


New 6-oxa-2-silabicyclo[2.2.0]hexanes by photochemical conversion of acyl(allyl)(dimethyl)silanes

Catherine Hammaeher and Charles Portella*

Under photochemical activation acyl(allyl)silanes are converted, in anhydrous acetonitrile, into new type heterobicyclo[2.2.0] hexanes: 1-alkyl-6-oxa-2-silabicyclo[2.2.0] hexanes.

5836



Titanocene-catalyzed alkylative dimerization of vinyl Grignard reagent using alkyl halides

Yuuki Fujii, Jun Terao,* Yuichiro Kato and Nobuaki Kambe*

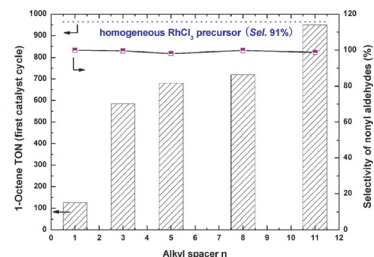
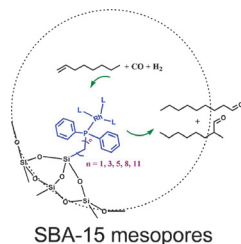
Dimerization of vinyl Grignard reagents and concomitant alkylation with alkyl halides have been achieved by using Cp₂TiCl₂ as a catalyst.

5839

Lengthening alkyl spacers to increase SBA-15-anchored Rh-P complex activities in 1-octene hydroformylation

Wei Zhou and Dehua He*

The alkyl spacer was lengthened in heterogenizing a Rh-P complex into mesoporous silicate SBA-15 to increase the immobilized catalyst activities in 1-octene hydroformylation to comparable homogeneous counterpart.

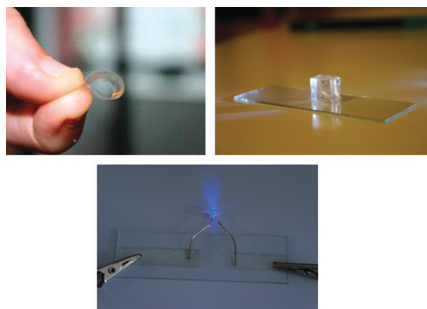


5842

Ion jelly: a tailor-made conducting material for smart electrochemical devices

Pedro Vidinha,* Nuno M. T. Lourenço, Carlos Pinheiro, Ana R. Brás, Tânia Carvalho, Teresa Santos-Silva, Abhik Mukhopadhyay, Maria J. Romão, Jorge Parola, Madalena Dionisio, Joaquim M. S. Cabral, Carlos A. M. Afonso and Susana Barreiros*

Ion jelly is a new concept for the design of a polymeric conducting material combining the chemical versatility of an organic salt (ionic liquid) with the morphological versatility of a biopolymer (gelatin).

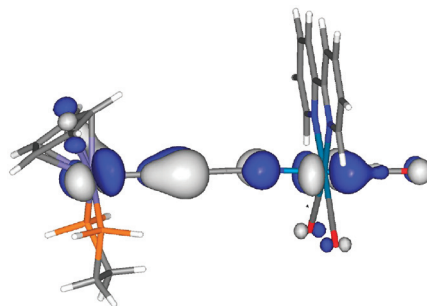


5845

Facile photoinduced charge separation through a cyanoacetylide bridge in a heterobimetallic Fe(II)-Re(I) complex

M. E. Smith, E. L. Flynn, M. A. Fox, A. Trotter, E. Wrede, D. S. Yufit, J. A. K. Howard, K. L. Ronayne, M. Towrie, A. W. Parker, F. Hartl and P. J. Low*

Fe-to-bpy charge transfer in $[\{\text{Cp}(\text{dppe})\text{Fe}\}(\mu\text{-C}\equiv\text{CC}\equiv\text{N})\{\text{Re}(\text{CO})_3(\text{bpy})\}]\text{PF}_6$ has been observed by ps-TRIR spectroscopy and spectroelectrochemistry.



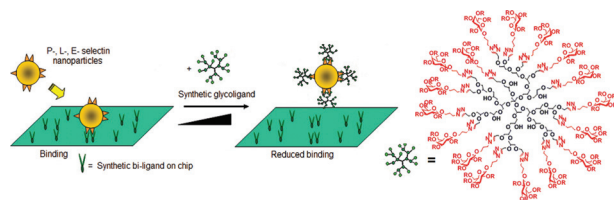
5848

An alternative approach to develop a highly sensitive and selective chemosensor for the colorimetric sensing of cyanide in water

Xiaoding Lou, Liyao Zhang, Jingui Qin* and Zhen Li*

By utilizing an indirect trick, zincon was found to be a "novel" highly sensitive and selective chemosensor for cyanide in pure aqueous solutions, with a detection limit of 0.13 ppm and a color change that could be observed by the naked eyes (A: control; B: cyanide; C-K: other anions).





Modular synthesis of multivalent glycoarchitectures and their unique selectin binding behavior

Ilona Papp, Jens Dervedde, Sven Enders and Rainer Haag*

Click chemistry allows the simple preparation of novel, multivalent galactose modified polyglycerols in high yields, independent of their surface functionality ($R = -OH$ and $-SO_3^- Na^+$). These glycoligands are remarkably strong selectin inhibitors (IC_{50} : 1 nM) as revealed by a surface plasmon-resonance based competitive binding assay.

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